



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/248,736	02/11/1999	TERRY MICHAEL BLEIZEFFER	ST998029	9147

7590 07/15/2004
Gates & Cooper LLP
Howard Hughes Center
6701 Center Drive West Suite 1050
Los Angeles, CA 90045

EXAMINER

PHAM, KHANH B

ART UNIT PAPER NUMBER

2177

DATE MAILED: 07/15/2004

30

Please find below and/or attached an Office communication concerning this application or proceeding.

cf



UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS
UNITED STATES PATENT AND TRADEMARK OFFICE
P.O. Box 1450
ALEXANDRIA, VA 22313-1450
www.uspto.gov

MAILED

JUL 15 2004

Technology Center 2100

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/248,736
Filing Date: February 11, 1999
Appellant(s): BLEIZEFFER ET AL.

Jason S. Feldmar
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed May 3, 2004.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct.

(6) *Issues*

The appellant's statement of the issues in the brief is correct.

(7) *Grouping of Claims*

Appellant's brief includes a statement that claims 1, 3-22, 24-43, 45-63 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

(8) *Claims Appealed*

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

5,842,218	ROBINSON	11-1998
5,956,715	GLASSER et al.	09-1999
6,198,480 B1	COTUGNO et al.	3-2001

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. **Claims 1, 3-22, 24-43, 45-63 are rejected under 35 U.S.C. 112, first paragraph**, as failing to comply with the written description requirement. The claim(s) contains subject matter which was **not** described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Independent claims 1, 22, and 43 contain the limitation: **"saving the filter and the specified selection criteria"**, which was not described in the specification. In the remark section of Appellant's Amendment dated October 21, 2003, page 17, Appellant relied on Fig. 17 and page 14, lines 11-22 of the specification to support this limitation. However, Fig. 17 shows an user interface for defining a filter but does not provide any mechanism to save

Art Unit: 2177

“the filter and the specified selection criteria” as claimed. The text portion at page 14, lines 11-22 recites: “The changes would have to be saved, for example, with the “save” action 1411, and the contents of the object which had been select 1607, may change as appropriate”. However, this “save” action is for saving the tree objects (i.e., object 1607 is “All JONES Tables”, see Fig. 16), not the filter. Appellant Specification, page 14, lines 1-4 also teaches: “Additionally, to **save a new customized tree** or changes to an existing customized **tree**, a user would select “Save” 1411 or “Save as” 1413 from the pull down menu, as illustrated in FIG. 14. The **tree** would then be **saved** as a file either on a user’s workstation or on a server”. Thus, the subject matter “saving the filter and the specified selection criteria” was not described in the specification. Claims **1, 3-22, 24-43, 45-63** are therefore rejected.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1, 3-22, 24-43, 45-63 are rejected under 35 U.S.C. 103(a)** as being unpatentable over Robinson (US 5,842,218 A), hereinafter referred to as “Robinson”,

Art Unit: 2177

and in view of Glasser et al. (US 5,956,715 A), and Cotugno et al. (US 6,198,480 B1), hereinafter referred as "Glasser" and "Cotugno", respectively.

As per claim 1, Robinson teaches a method of creating a customize tree in a computer from a original tree comprising:

- "Creating a filter in response to user input, wherein the filter specifies a selection criteria to select objects to be contained within a selected object on the customized tree" at Col. 3 line 60 to Col. 4 line 8 and Figs. 8 and 18B.
- "selecting one or more objects on the original tree to be contained in the customized tree in response to user input by applying the filter, wherein the one or more objects are located in disparate places across different branches of the original tree" at Col. 3 lines 34-54 and Figs. 11-16;
- "linking the selected objects from the disparate places to each other in the customized tree in a user-specified manner" at Col. 3 lines 34-54 and Figs. 11-16.

Robinson does not teach the step of: "saving the filter and the specified selection criteria". However, Cotugno teaches a similar method for defining a filter applied to a hierarchical tree structure including the step of: "saving the filter and the specified selection criteria" at Col. 47, lines 60-67. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was make to combine Robinson and Cotugno's teaching so that the filter can be reused later.

Robinson and Cotugno do not teach the step of: "defining security restriction for accessing the selected objects using the customized tree". However, Glasser teaches a

method of defining security restriction for a portion of a hierarchical tree structure (Col. 2, lines 13-33 and Fig. 4) includes the step of: "defining security restriction for accessing the selected objects using the customized tree" at Col. 8, lines 10-40 and Figs. 5, 6B. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Robinson and Cotugno's method to include the step of "defining security restriction..." in order to allow user to change access permission to a portion of the tree structure; and, as indicated by Glasser, "provides a streamlined user interface that insulates the user from the complexities in making these change" and "perform access controls inheritance automatically. The user need not be concerned with distinctions between explicit and implicit access controls or the intricacies of the inheritance and propagation logic" (Col. 3 lines 15-20).

As per claim 3, Robinson, Cotugno and Glasser teach the method of claim 1 as discussed above. Robinson also teaches: "the step of applying the filter further comprises the step of selecting objects from multiple parent objects" at Col. 3 lines 34-54 and Figs. 11-16.

As per claim 4, Robinson, Cotugno and Glasser teach the method of claim 3 as discussed above. Robinson also teaches: "the multiple parent objects are contained on multiple platforms" at Col. 5 lines 40-50.

As per claim 5, Robinson, Cotugno and Glasser teach the method of claim 1 as discussed above. Robinson also teaches: "if the objects to be selected by the filter change, the customized tree is automatically updated to reflect the changed objects" at Col. 9 lines 39-53.

As per claim 6, Robinson, Cotugno and Glasser teach the method of claim 1 as discussed above. Robinson also teaches: “modifying the customized tree” at Col. 12 lines 25-45.

As per claim 7, Robinson, Cotugno and Glasser teach the method of claim 6 as discussed above. Robinson also teaches: “the step of modifying further comprises the step of adding an object to the customized tree” at Col. 12 lines 25-45.

As per claim 8, Robinson, Cotugno and Glasser teach the method of claim 6 as discussed above. Robinson also teaches: “the step of modifying further comprises the step of removing an object of the customized tree” at Col. 12 lines 25-45.

As per claim 9, Robinson, Cotugno and Glasser teach the method of claim 6 as discussed above. Robinson also teaches: “the step of modifying further comprises the step of copying an object into the customized tree” at Col. 12 lines 25-45.

As per claim 10, Robinson, Cotugno and Glasser teach the method of claim 6 as discussed above. Robinson also teaches: “the step of modifying further comprises the step of copying an object from a first position in the customized tree to a second position in the customized tree” at Col. 12 lines 25-45.

As per claim 11, Robinson, Cotugno and Glasser teach the method of claim 6 as discussed above. Robinson also teaches: “the step of modifying further comprises the step of removing the customized tree” at Col. 12 lines 35-45.

As per claim 12, Robinson, Cotugno and Glasser teach the method of claim 6 as discussed above. Robinson also teaches: “the step of modifying further comprises the step of changing an object” at Col. 11 lines 23-49.

As per claim 13, Robinson, Cotugno and Glasser teach the method of claim 1 as discussed above. Robinson also teaches: “using the customized tree to simultaneously perform an action on multiple objects contained in the customized tree” at Col. 12 lines 34-46.

As per claim 14, Robinson, Cotugno and Glasser teach the method of claim 6 as discussed above. Glasser also teaches: “restricting access to the customized tree” at Col. 8 lines 10-40.

As per claim 15, Robinson, Cotugno and Glasser teach the method of claim 1 as discussed above. Robinson also teaches: “enabling customization of labels for objects in the customized tree” at Figs. 11-22.

As per claim 16, Robinson, Cotugno and Glasser teach the method of claim 15 as discussed above. Robinson also teaches: “each label distinguishes between different objects of a similar type” at Figs. 11-22

As per claim 17, Robinson, Cotugno and Glasser teach the method of claim 15 as discussed above. Robinson also teaches: “each label is an indicator of a filter” at Col. 10 lines 1-14.

As per claim 18, Robinson, Cotugno and Glasser teach the method of claim 1 as discussed above. Robinson also teaches: “providing graphical user interfaces for creating the customized tree and wherein the user input is received from one or more graphical user interfaces” at Col. 6 lines 30-40 and Figs. 11-22.

As per claim 19, Robinson, Cotugno and Glasser teach the method of claim 1 as discussed above. Robinson also teaches: "the customized tree contains a subset of the objects of the original tree" at Figs. 13-16.

As per claim 20, Robinson, Cotugno and Glasser teach the method of claim 1 as discussed above. Robinson also teaches: "the objects of the customized tree are organized in a user-specified manner" at Col. 3 lines 35-55.

As per claim 21, Robinson, Cotugno and Glasser teach the method of claim 1 as discussed above. Robinson also teaches: "creating multiple customized trees" at Fig. 14.

Claims 22, 24-43, 45-63 recite an apparatus and an article of manufacture having similar limitation as in claims 1- 21. Therefore, claims 22, 24-43, 45-63 are rejected by the same rational.

Allowable Subject Matter

3. **Claims 64-105 are allowed.**

(11) Response to Argument

A. Response to the issue regarding the objection to Claims 1, 22, 24-43, and 45-77.

In view of the After Final Amendment filed January 30, 2004, in which the informalities have been corrected, the objection to claims 1, 3-22, 24-43, 45-77 has been withdrawn.

B. Response to the issue regarding the U.S.C 112, 1st paragraph rejection to claims 1, 3-22, 24-43, and 45-63.

Appellant argued that the U.S.C 112, 1st paragraph is improper because the specification of the present application provides support for the limitation "saving the filter and the specified selection criteria" at page 11, lines 12-23, page 14 lines 11-22 and Fig. 17. On the contrary, these cited text portions only describe the step of applying selection criteria to determine object to be contained in the customized tree, but do not describe the step of: "saving the filter and the specified selection criteria" as claimed.

Webster's New World Dictionary of Computer Terms, 6th edition, 1997, defines the term "Save" as: "To transfer data from the computer's random-access memory (RAM), where the data is vulnerable to erasure, to a storage medium such as a disk drive" (See attached pages from Webster's Dictionary). Appellant's usage of the terms "save" is also consistent with this definition in various portions of the specification such as: "a Save action that would save the customize tree object to a file" (Page 7, line 8, emphasis added), or "The tree would then be saved as a file either on a user's workstation or on a server" (Page 14, lines 3-4, emphasis added). Therefore, a "save" action requires the data from the volatile memory (i.e., RAM) to be stored in a permanent storage device as a file. Saving data normally requires user inputting a file name and selecting a storage location to store the file so that the file can be retrieved later using the file name and its storage location.

The cited text portion in which Appellant relied on does not teach "saving the filter and the specified selection criteria" because the filter and the specified selection criteria are neither "transfer[red] to a storage medium" nor stored "as a file" in a storage medium. Appellant argued that the phrase "the window reflects the selections previously made" in the specification implies that the selection criteria were saved and stored. The examiner respectfully submits that this assumption is incorrect because when "the user clicks "OK" to lock in the values", the selection criteria are only retained in the computer's temporary memory (i.e., RAM), but not saved. In order to make these changes become permanent, Appellant's specification requires a further step, which save the contents of the object to reflect the changes:

"The user makes changes desired and those changes take effect when the user clicks on the "OK" button 1721. The changes would have to be saved, for example, with the "Save" action 1311 and the contents of the object which had been selected 1607, may change as appropriate." (Specification, page 14, lines 17-20).

This "Save" action 1311, however, is applied to the "contents of the object" and "is irrelevant with respect to the filtering criteria", as stated by appellant at page 6 of the Appeal Brief, and therefore it does not provide support for the limitation "save the filter and the specified selection criteria" as claimed.

Further, the claimed limitation requires both "the filter" and "the selection criteria" are saved. Appellant seemed to equate "Table Filter" and the filter criteria within the table filter with "the filter" and "the specified selection criteria" as in the claims. However,

Art Unit: 2177

the "Table Filter" is never saved. The specification does not disclose that the "Table Filter" is "transfer[red] to a storage medium" nor "stored as a file" so that it could be later retrieved and applied to another tree to produce a new customized tree.

In conclusion, the subject matter "saving the filter and the specified selection criteria" was not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventor(s), at the time of the application was filed, had possession of the claimed invention. The 35 U.S.C 112, 1st paragraph rejection to claims 1, 3-22, 24-43, 45-63 is proper and should be sustained.

C. Response to the issue regarding Cotugno Reference.

As discussed in Section B above, the specification of the present application does not provide support for the limitation: "saving the filter and the specified selection criteria". Similarly, The provisional application contains similar disclosures, but in lesser detail, and does not describe the step of: "saving the filter and the specified selection criteria" as claimed. The cited text portions at page 8, lines 4-14 and page 10 lines 4-8 do not describe that the filter and the specified selection criteria are "transferred to a storage medium" nor "stored as a file". Therefore, the present application does not qualify for the priority date of the Provisional Application, with respect to this limitation.

The Cotugno reference is used only to reject the limitation: "save the filter and the specified selection criteria". The Cotugno reference is therefore a valid prior art because it was filed on January 29, 1999, before the filing date of the present application, February 11, 1999. The 35 U.S.C 103 rejection to claims 1, 3-22, 24-43, 45-

Art Unit: 2177

63 as being unpatentable over Robinson, in view of Glasser and Cotugno, at set forth in section 10, Grounds of rejection, above, is proper and should be sustained.

D. Response to the issue regarding the 35 U.S.C. 103 rejection to claims 1, 3-4, 6-9, 11-16, 18-21, 22, 24-25, 27-30, 32-37, 39-42, 43, 45-46, 48-51, 53-58, and 60-63.

Appellant argued that Robinson does not teach “filters that specify selection criteria for selecting objects”. On the contrary, Robinson teaches this limitation at Fig. 18B reproduced below:

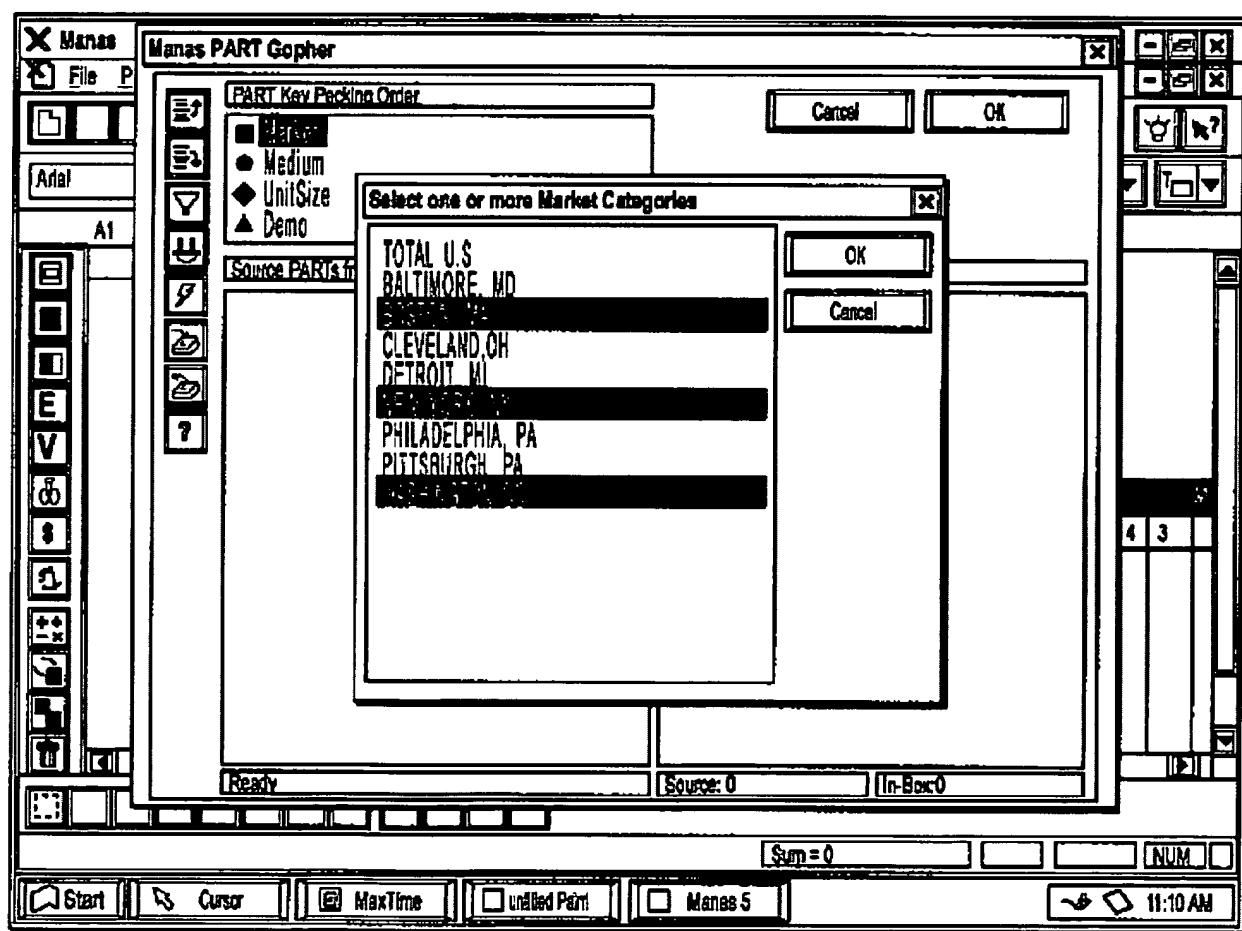


FIG. 18B

In Fig. 18B, Robinson teaches the step of creating a filter in response to user input, wherein only the category selected by the user (i.e., "Boston, MA", "New York, NY", and "Washington, DC") are included in the customized tree (See Fig. 8 reproduced below)

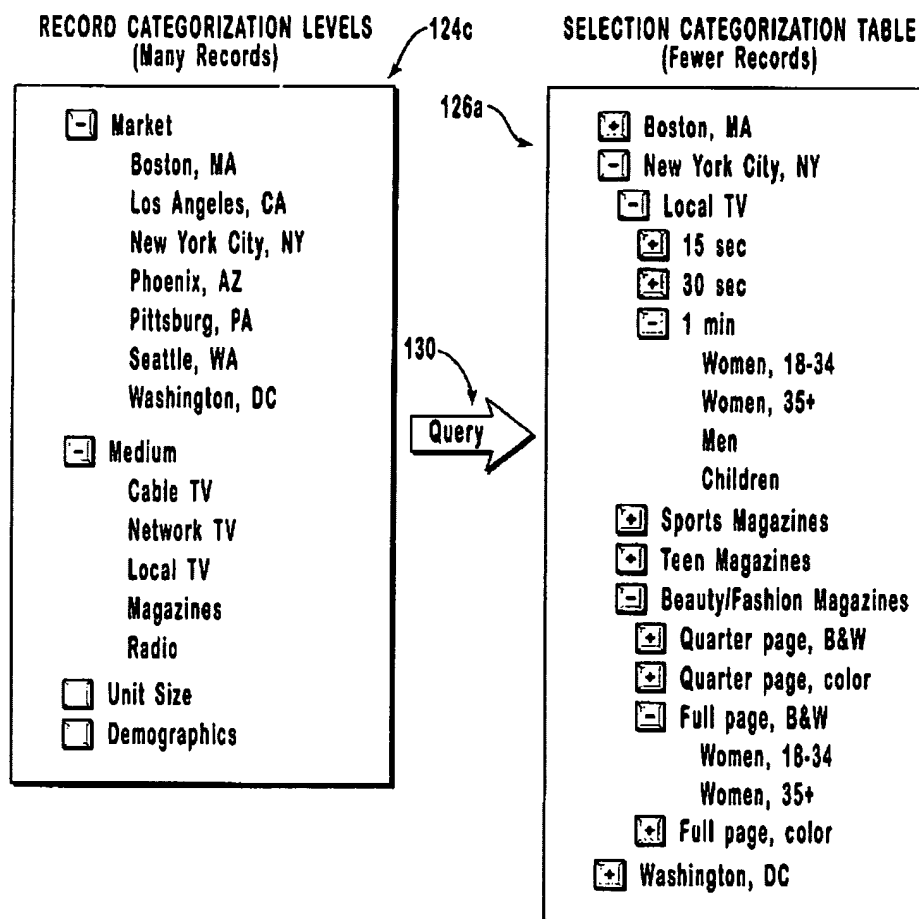


FIG. 8

This step is similar to appellant's step described at Fig. 17, in which columns of the tables are selected to be included in the customized tree based on their values.

Appellant argued that Robinson "filter" is different from Appellant's filter because "Robinson places quotes around the term "filter" to indicate that the described steps merely act as a filter". The examiner respectfully submits that if something acts as a filter, then it is a filter. Robinson's "filter" also meets the requirement of the claimed languages because it "specifies a selection criteria to selected object to be contained within a selected object on the customized tree" as seen in Robinson's Figs. 8 and 18B above.

Appellant argued that the cited portions of Robinson "refers not to the creation of an actual filter with selection criteria (as claimed), but merely selecting a subset of values for a categorization level to "filter" through many records potentially available" (Appeal Brief, page 12). On the contrary, Robinson's Fig. 18B provides a user interface to allow user to define a filter by choosing selection criteria, which is used "in making a database query" (Robinson, Col. 3 lines 67). Robinson's Fig. 8 shows the query 130 in place of a filter to filter the original tree on the left ("Many Records") to the customized tree on the right ("Fewer Records"). Therefore, Robinson actually uses the selection criteria to create the filter (i.e., query 130), which is used to filter the tree as seen in Fig. 8 above.

Appellant argued that Robinson "fails to provide for saving such a filter". However, the Examiner relied on Cotugno for teaching of this limitation instead of Robinson.

In response to appellant's argument that there is no suggestion to combine the Robinson and Cotugno references, the examiner recognizes that obviousness can only

Art Unit: 2177

be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, saving data is the foundation of computer art. Adding the saving step to any data structure is an obvious modification to store that data permanently so that it could be retrieved and reused later. Examiner disagrees with Appellant's statement that Cotugno does not provide any customized tree structure. Similar to Robinson's teaching, Cotugno teaches the step of creating a filter to be applied on a tree in order to "sort any tagname list and display only the tagname that meet the criteria you specify" (Cotugno, Col. 47 lines 60-65). Cotugno therefore also teaches creating a customized tree from an original tree by applying a filter. Cotugno also suggests " save each filter instance and reuse it at any time" at Col. 47, line 67.

In conclusion, Robinson and Cotugno both teach the step of creating a customized tree from an original tree by applying a filter. Cotugno furthers teaches the step of "saving the filter" and provide motivation to do so (i.e., "reuse it at any time"). Thus, it would have been obvious to one of ordinary skill in the art to modify Robinson's teaching to include the step: "saving the filter and the specified selection criteria" as suggested by Cotugno.

Appellant also argued that "Cotugno clearly fails to teach numerous steps of the invention as claimed", without specifically pointing out how the language of the claims

Art Unit: 2177

patentably distinguishes them from the references. The examiner respectfully submits that Cotugno reference is used only to reject the limitation "saving the filter and the specified selection criteria" as discussed above. All other limitations of the claims are rejected based on Robinson and Glasser.

In view of the arguments above, the 35 U.S.C. 103(a) rejection to claims 1, 3-4, 6-9, 11-16, 18-21, 22, 24-25, 27-30, 32-37, 39-42, 43, 45-46, 48-51, 53-58, and 60-63 should be sustained.

E. Response to the issue regarding the 35 U.S.C 103(a) rejection to claims 5, 26, and 47.

Appellant argued that Robinson does not teach the limitation: "if the objects to be selected by the filter change, the customized tree is automatically updated to reflect the changed objects". On the contrary, as seen in Fig. 8 above, Robinson teaches the customized tree (i.e., "selection categorization table") contained objects selected by the filter (i.e., "query" 130). Robinson also teaches the step of updating the customized tree (i.e., categorization table) if the index values is not duplicate information (.ie., "when values for the table vector is not equal to the value for the terrace vector.") . Fig. 6 shows the steps for updating the customized tree, which include a loop from step 112 to 122 indicate that theses steps are performed automatically and continuously. Any change to the object is compared and the tree will be updated to reflect the change immediately.

In view of the argument above, the 35 U.S.C 103 rejection to claims 5, 26 and 47 should be sustained.

F. Response to the issue regarding the 35 U.S.C 103(a) rejection to claims 10, 31, and 52.

Appellant argued that Robinson does not teach the step of: “copying an object from a first position in the customized tree to a second position in the customized tree”. On the contrary, Robinson teaches at Col. 12, lines 25-45 that “the selection categorization table is displayed and may be manipulated through the user interface by a user...” A sample user interface is shown at Figs. 20-21, where the user can select an object and move or copy it to another position within the tree. For example, object with the label “W25-54” in Fig. 20 has been moved to a second position as seen in Fig. 21; and the object labeled “Early News Spot” in Fig. 20 has been copy to a second position as seen in Fig. 22.

In view of the argument above, the 35 U.S.C 103 rejection to claims 10, 31 and 52 should be sustained.

G. Response to the issue regarding the 35 U.S.C 103(a) rejection to claims 17, 38 and 59.

Appellant argued that Robinson does not teach: “each label is an indicator of a filter”. On the contrary, as seen at Fig. 7, Robinson uses a label for each object of the tree that, each label is “associated with a price and rating table data record that may be found in a database. Such information is attained upon designating the data base by

Art Unit: 2177

doing a query on predefined keys". Therefore, in Fig. 7, each label (e.g., Medium, Market, Unit Size, Demographic) is an indicator of a filter because it contains only selected information from the database which associated with that label. For example, the label "Medium" is an indicator of a filter to select only information from the database associated with the "Medium" such as "Cable TV, Network TV, Local TV, Magazines, Radio" as seen in Fig. 8.

In view of the argument above, the 35 U.S.C 103 rejection to claims 17, 38 and 59 should be sustained.

For the above reasons, it is believed that the rejections should be sustained.


Application/Control Number: 09/248,736
Art Unit: 2177

Page 20

Respectfully submitted,

Khanh B. Pham
Examiner
Art Unit 2177


KBP
July 8, 2004



John E. Breene
Supervisory Patent Examiner

Conferees

Safet Metjahic
Supervisory Patent Examiner



SAFET METJAHIC
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

Gates & Cooper LLP
Howard Hughes Center
6701 Center Drive West Suite 1050
Los Angeles, CA 90045

Category: General Computing

Comprehensive

Recommended

The language of computing is in high-speed evolution. In computer books and references. Together, they have created computer terms, with computing, network computing, all the latest and most fully explained.

Completely revised edition of *Computer Terms*, covering in the world of PC, Macintosh, Unix, the Internet, multimedia, reality, and more. Contains perfect resources for

A-Z coverage of all terms from DVB to WWW

Extensive glossary

Clear, complete

Concise

Visit us online

ISBN 0-02-361530-0



9 780023 618906



3 0402 00141 6397

WEBSTER'S NEW WORLD

DICTIONARY of COMPUTER TERMS

SIXTH EDITION

The Best Computer Dictionary in Print

Clear, complete, up-to-date

Extensive Internet coverage

More than 4,000 terms and acronyms

Bryan Pfaffenberger

que



SAA See *Systems Application Architecture*.

safe format A disk *formatting* method that doesn't destroy the data on the disk so you can recover it if necessary. To format safely with MS-DOS, use the FORMAT command without the /u switch.

safe mode In *Microsoft Windows 95*, a start mode in which the *operating system* initializes without user-added extensions. This mode enables the user to determine which of the recently added programs are causing problems.

sampling rate The frequency with which a recording device, such as a *sound board*, takes readings of the sound it is recording. High-quality sound boards, such as the equipment used to record audio compact discs, have sampling rates of 44.1 *kilohertz (KHz)* or higher. Although sound boards with lower sampling rates may be adequate for recording simple noises or even voice clips, they are not adequate for recording music.

sandbox In *Java*, a safe area for the execution of *applets*, created by the *Java virtual machine*, in which applets cannot get access to the computer's file system.

sans serif A *typeface* that lacks *serifs*, the ornamental straight or curved lines across the ends of the main strokes of a character. *Helvetica* and *Arial* are two readily available sans serif fonts. Sans serif typefaces are preferable for *display type* but, when used for *body type*, are harder to read than serif typefaces such as *Times Roman*.

SASI See *Shugart Associates Standard Interface*.

SATAN A network security diagnostic tool that exhaustively examines a network and reveals security holes. SATAN is a two-edged sword: in the hands of network administrators, it is a valuable tool for detecting and closing security loopholes. In the hands of intruders, it is an equally valuable tool for exposing remaining loopholes and gaining *unauthorized access* to a network.

satellite 1. In a *multi-user system*, a *terminal* or *workstation* linked

printers, an extraneous spot of ink in the area around characters in which no ink should be present.

saturation 1. In a *charge-coupled device (CCD)*, the degree to which *pixels* can hold a charge, and therefore sustain the appearance of even color in the display. 2. In monitors, the degree to which the display can differentiate between colors and display each color accurately, throughout the screen area.

save To transfer data from the computer's *random-access memory (RAM)*, where the data is vulnerable to erasure, to a storage medium such as a *disk drive*.

sawtooth distortion See *aliasing*.

scalability The capability of hardware or software to accommodate increasing numbers of users. A *server* that can accommodate a dozen users may fail catastrophically when the number of users expands to 1,000. A scalable system includes an upgrade path that enables administrators to add extra capacity as needed so that overall system performance is not degraded in the slightest.

scalable font A *screen font* or *printer font* that you can enlarge or reduce to any size, within a specified range, without introducing unattractive distortions. *Outline font* technology is most commonly used to provide scalable fonts, but other technologies—including stroke fonts, which form characters from a matrix of lines—are sometimes used. The most popular scalable fonts for *Macintosh* and *Microsoft Windows 95* systems are *PostScript* and *TrueType* fonts. See *bit-mapped font*.

scalar architecture The design of a *microprocessor* with only one *pipeline*. Microprocessors with multiple pipelines have *super-scalar architecture*.

scale-up problem In a *network*, a technical problem caused by the system expanding far beyond its projected maximum size. For example, every computer connected to the *Internet* must have its own unique address, called an *IP address*. However, the Internet's designers, never guessing how popular the Internet would become, did not allow for a sufficient number of IP addresses. The network will have to be redesigned from the ground up—that is, with a new *IP protocol* (called *IPv6*) in order